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reversing the poles of the magnet, the former motions will cease, and others similar to them will take place in the direction of the other dotted line.

N° II.

MELTING POTS.



The LARGE SILVER MEDAL was this Session presented to Mr. HENRY MARSHALL, of Newcastle on Tyne, for his improved Melting Pots for Brass Founders and other workers in Metal. Samples of the Pots are placed in the Society's Repository.

LARGE earthenware crucibles (technically called melting pots) are used in great quantities by brass founders, steel melters, and other workers in metal. They are made in London, Birmingham, Sheffield, and other places; and their ingredients are tenacious refractory clay, together with fragments of earthenware made of the same or similar clay, reduced to powder more or less coarse according to the experience of the manufacturer. It is not necessary that they should be possessed of the highest degree of refractoriness, since the heat to which they are exposed is not so great, nor are the fluxes employed by the founders so active, as are necessary for the reduction of metallic ones to their reguline state. But it is especially expedient that they should be capable of enduring

considerable changes of temperature without cracking or becoming unsound, as otherwise, each pot would not be capable of standing more than a single fusion. The common melting pots being made entirely of earthy ingredients, are very apt to crack, either if allowed to cool gradually after the first fusion, or if a second charge of cold or nearly cold material is thrown in while the pot remains in a heated state. The German black lead pots (or blue pots as they are called) contain a considerable quantity of plumbago in their composition, and hence will stand a greater number of fusions; but the cost of these is considerably greater than the common melting pots, and in time of war they are not always to be had.

Mr. Marshall's pots are made of a mixture of Stourbridge clay, potsherds, and pulverized coke, well incorporated together by beating; and instead of being *thrown* on the potter's wheel, the pot is made by pressing the above composition into a brass mould of the proper size and figure, by means of a core worked by a powerful screw press. Thus the vessel acquires a great and equal degree of solidity throughout, while the intermixture of coke with the clay, by giving a certain porosity of texture, renders it much less liable to crack, on transition from heat to cold, than those melting pots composed entirely of earthy ingredients.

The following certificates from founders of great respectability attest the goodness of the pots made by Mr. Marshall, and that the price of them is not greater than of those from other makers.

CERTIFICATES.

SIR;

Gateshead, near Newcastle,
March 9, 1822.

I HAVE for some time past used the improved earthenware crucibles made by Mr. Henry Marshall, of this place, and find them much superior to those I have formerly had from Birmingham and other places; I have them frequently in use a second day, which I never before could accomplish, and consider them in many respects equal to the black-lead pots; and come equally as low as the pots I have used generally.

I am, Sir,

To A. Aikin, Esq.

&c. &c. &c.

Secretary, &c. &c.

JOHN ABBOT.

SIR;

No. 69, Red Lion Street, Clerkenwell,
March 21, 1822.

OBSERVING the offer of a premium for improved earthenware crucibles, I beg to acquaint the Society that those made by Mr. Henry Marshall, of Newcastle-upon-Tyne, are much superior to any I ever saw, or used, for bearing great heats and standing changes of temperature without cracking; I use them frequently a second day, which I could not accomplish by any other make; in short, I conceive them superior to black-lead pots.

I am, Sir,

To A. Aikin, Esq.

&c. &c. &c.

*Secretary, &c. &c.*ROBERT BOWER, *Brass Founder.*

February 15, 1822.

I CERTIFY that the large crucibles, with H. Marshall, Newcastle, pressed upon the edge, are the best clay crucibles I ever made use of.

H. VERNON, *Master of the Metal Mills,*
Portsmouth Yard.

SIR;

Brownlow Street.

I BEG to acquaint you, for the information of the Society of Arts, that I am in daily use of Mr. Henry Marshall's crucibles, and find them of a very improved quality: I use them frequently two or three days, and, from having made use of the black-lead pots in my business, I now find that Mr. Marshall's are equal, if not superior, to them, and not higher in price than the earthenware crucibles before in common use.

I am, Sir,

To A. Aikin, Esq.

&c. &c. &c.

Secretary, &c. &c.

A. HARCOURT, *Brass Founder.*

46, 47, 48, & 49 Shoe-lane,
March 23, 1822.

THIS is to certify that we, the undersigned, can and do assert, from experience, that the melting pots manufactured by Mr. H. Marshall, of Newcastle, are superior to any we ever used, and that we have tried various other manufacturers pots, but give a decided preference to those manufactured by the above-named Henry Marshall.

WM. PONTIFEX, SONS, & WOOD.